

BILIM VA MALAKALARNI BAHOLASH AGENTLIGI DARAJASIDA

Bilimingga ishon va muvaffaqiyatga erish!

UMUMTA'LIM VA MAXSUS FANLARDAN BILISH DARAJASINI ANIQLASHNING MILLIY
SERTIFIKAT IMTIHONI ISHTIROKCHILARI UCHUN

MATEMATIKA
FANIDAN
TEST TOPSHIRIQLARI KITOB

Ishtirokchining familiyasi, ismi va otasining ismi

Imzo

Testni tuzuvchi: **TypoThesis jamoasi**

Telegram kanal: **@Milliymath_sertifikat**

Ushbu test varianti 45 ta (1-45) topshiriqdan iborat.

Test topshiriqlari RASCH MODEL asosida baholanadi.

Kitobning yopiq va ochiq turdagi test topshiriqlari mavjud.

– yopiq turdagi test topshiriqlarida javob variantlari (A, B, C va D) orasidan aynan bitta javobni tanlang va javoblar varaqasidagi topshiriq raqamiga mos qatorda belgilang.

– ochiq turdagi test topshiriqlarining javobini javoblar varaqasidagi topshiriq raqamiga mos qatorda aniq, tushunarli va eng sodda ko'rinishda yozing.

– moslashtirishni talab qiluvchi yopiq test topshiriqlari uchun umumiy oltita (A – F) javob variantlari berilgan, uchta topshiriqqa (33-35 — test topshiriqlariga) ushbu javoblar orasidan mos ravishda bittadan javob tanlang va javoblar varaqasiga belgilang.

MILLIY SERTIFIKAT NAMUNAVIY SAVOLLAR TO'PLAMI!

15.02.2026

1. Agar a, b raqamlar uchun $\overline{ab} + a^b = 155$ bo'lsa, $7a + 6b$ ning qiymatini toping.

A) 45
B) 53
C) 47
D) 56

2. Musbat bo'luvchilari $d_1, d_2, \dots, d_{12}$ bo'lgan d soni uchun

$$1 = d_1 < d_2 < d_3 < \dots < d_{12} = d, \quad d_6 = 12 \text{ va } d_8 + d_2 = 48$$

shartlari bajariladi. d ning raqamlari yig'indisini toping.

A) 15
B) 23
C) 12
D) 18

3. Teplovoz ma'lum vaqt ichida 325 km masofani o'tishi kerak, shu yo'lning 0,4 qismini o'tgandan so'ng u 24 minut ushlanib qoldi. Keyin belgilangan vaqtda yetib borish uchun tezligini 10 km ga oshirdi. Teplovozning oxirgi tezligini toping.

A) 65 km/soat
B) 95 km/soat
C) 85 km/soat
D) 75 km/soat

4. 25 kg eritmaning 40% i tuzdan iborat. Tuzning miqdorini 32% qilish uchun eritmaga necha kg chuchuk suv qo'shish kerak?

A) 6
B) 6,25
C) 7
D) 7,5

5. Hisoblang:

$$\left(\frac{1}{3} + \frac{2}{3} + \frac{3}{3}\right) + \left(\frac{1}{4} + \frac{2}{4} + \frac{3}{4} + \frac{4}{4}\right) + \dots + \left(\frac{1}{15} + \frac{2}{15} + \dots + \frac{15}{15}\right).$$

A) 70
B) 65
C) 54
D) 63

6. Hisoblang:

$$\frac{20222021^2}{20222020^2 + 20222022^2 - 2}.$$

A) 2

B) $\frac{1}{2}$

C) $\frac{1}{3}$

D) $\frac{2}{3}$

7. $m = 45678^3 - 45676^3$ bo'lsa, $\sqrt{\frac{m-2}{6}}$ ning qiymatini toping.

A) 45678

B) 45676

C) 45677

D) 45675

8. Arifmetik progressiyaning uchinchi va beshinchi hadlari yig'indisi 30 ga teng. Shu progressiyaning ikkinchi, to'rtinchi va oltinchi hadlari yig'indisini toping.

A) 30

B) 45

C) 22,5

D) 60

9. Cheksiz kamayuvchi geometrik progressiyaning birinchi hadi ikkinchisidan 8 ga ortiq. Hadlarining yig'indisi esa 18 ga teng. Progressiyaning uchinchi hadini toping.

A) $-1\frac{1}{3}$

B) $1\frac{1}{3}$

C) $1\frac{2}{3}$

D) $2\frac{2}{3}$

10. Agar $49^x + 49^{-x} = 62$ bo'lsa, $7^x + 7^{-x}$ ning qiymatini toping.

A) 7

B) 8

C) 64

D) $2\sqrt{2}$

11. $a = 3 - \sqrt{7}$, $b = -\sqrt{3} + \sqrt{7}$ va $c = \sqrt{3} - 3$ bo'lsa, $\frac{a^3 + b^3 + c^3}{9\sqrt{3} - 27 - 3\sqrt{21} + 9\sqrt{7}} + \sqrt{3}$ ifodaning qiymatini toping.

A) $\sqrt{3}$

B) $2\sqrt{3}$

C) $\sqrt{7}$

D) $2\sqrt{7}$

12. $a \neq b$ sonlar uchun, $\frac{\sin^4 x}{a} + \frac{\cos^4 x}{b} = \frac{1}{a+b}$ bo'lsa, $\frac{\sin^8 x}{a^3} + \frac{\cos^8 x}{b^3}$ ning qiymatini toping.

A) $\frac{1}{(a+b)^2}$

B) $-\frac{1}{(a+b)^3}$

C) $\frac{1}{(a+b)^3}$

D) $-\frac{1}{(a+b)^2}$

13. $\cos x = \frac{1}{4}$ tenglamaning $[0; 3\pi]$ orasidagi yechimlari soni nechta?

A) 1 ta

B) 2 ta

C) 3 ta

D) 4 ta

14. $a, b, c, d > 0$ sonlari uchun

$$\begin{cases} \frac{1}{a+1} + \frac{2}{b+1} + \frac{3}{c+1} + \frac{4}{d+1} = x \\ \frac{a}{a+1} + \frac{2b}{b+1} + \frac{3c}{c+1} + \frac{4d}{d+1} = 4x \end{cases}$$

tengliklar o'rinli bo'lsa, $4x^2$ ning qiymatini toping.

A) 14

B) 15

C) 16

D) 18

15. Tenglamalar sistemasining necha juft yechimi bor:

$$\begin{cases} |x-1| + y = 0 \\ 2x - y = 1 \end{cases}$$

A) 1 ta

B) 2 ta

C) 3 ta

D) 4 ta

16. Tengsizlik nechta butun yechimga ega:

$$\frac{\sqrt{2+x}-5}{3-\sqrt{x+2}} > 0.$$

- A) 16 ta
- B) 15 ta
- C) 17 ta
- D) 14 ta

17. Tenglamaning haqiqiy ildizlari o'rta geometrik qiymatini toping:

$$\log_5(4^x + 144) - 4\log_5 2 = 1 + \log_5(2^{x-2} + 1)$$

- A) 8
- B) 2
- C) $2\sqrt{2}$
- D) 3

18. Tengsizlikni qanoatlantiruvchi eng katta manfiy butun son va eng kichik musbat butun sonlar yig'indisini toping:

$$\frac{x^2}{x-2} \leq \frac{4x}{2-x}.$$

- A) -1
- B) 0
- C) -2
- D) -3

19. $x, y, z \in \mathbb{R}$ sonlari uchun

$$2x^2 + y^2 + 2z^2 - 8x + 2y - 2xy + 2xz - 16z + 35 = 0$$

bo'lsa, $x \cdot y \cdot z$ ning qiymatini toping.

- A) 15
- B) 24
- C) 30
- D) -30

20. $f(x) = 2026(x-3)^2 + 2$ bo'lsa, $f(-x-2)$ ning uchining koordinatalari ko'paytmasini toping.

- A) -16
- B) -15
- C) -10
- D) -12

21. Keltirilgan funksiyalarning nechitasi toq funksiya:

1. $y = x^5 - 7x^3 + 15x$

2. $y = \frac{3x^2 - 3x^4 - 2}{7x + 4x^3}$

3. $y = (5x - 2)^2 - (25x^2 + 4)$

4. $y = 7e^{-x^2}$

5. $y = \frac{\sin 2x \cdot \cos 3x}{x^5}$

A) 1

B) 2

C) 3

D) 4

22. Funksiyaning statsionar nuqtalari yig'indisini topig:

$$y = \frac{x^5}{5} + x^4 + \frac{2}{3}x^3 - 2x^2 + x + 1 .$$

A) -2

B) $2 - \sqrt{2}$

C) 2

D) $2 + 2\sqrt{2}$

23. Aniq integralni hisoblang:

$$\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \sin 3x \cdot \sin 5x \, dx .$$

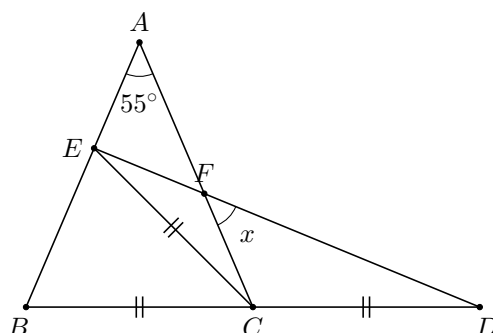
A) $\frac{3}{4}$

B) $\frac{1}{16}$

C) $-\frac{1}{8}$

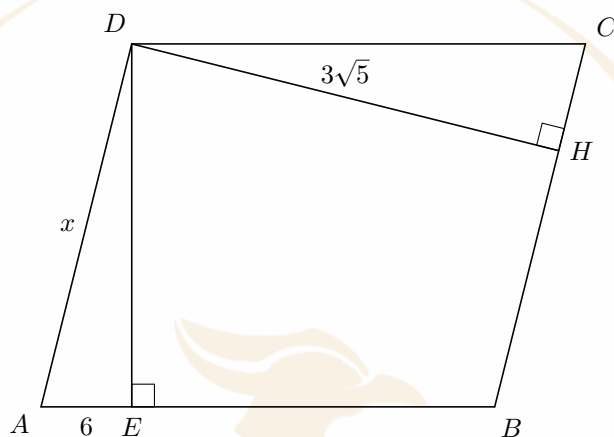
D) $-\frac{1}{4}$

24. Quyidagi rasmda $|BC| = |CD| = |EC|$ va $\angle BAC = 55^\circ$ burchakni toping.



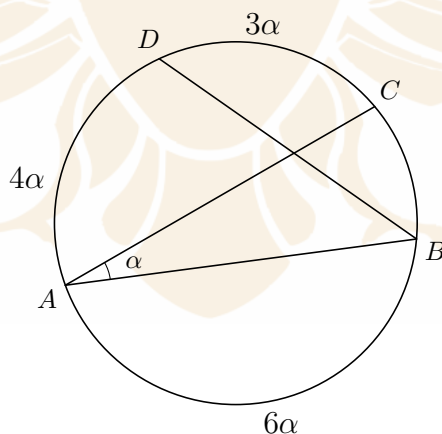
- A) 25°
- B) 30°
- C) 35°
- D) 40°

25. $ABCD$ romb berilgan. Agar $DF \perp BC$, $DE \perp AB$, $|DF| = 3\sqrt{5}$ cm, $|AE| = 6$ cm bo'lsa, $|AD| = x$ ning qiymatini toping.



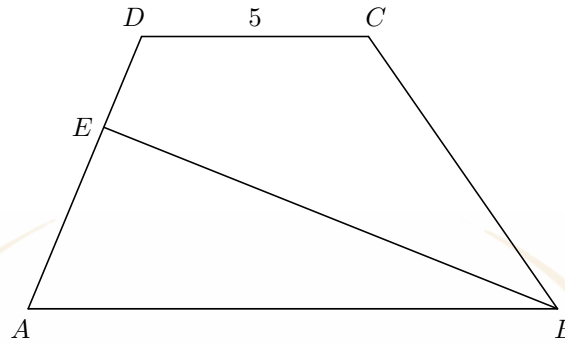
- A) 9
- B) $4\sqrt{6}$
- C) 10
- D) 11

26. Aylana $\widehat{DC} = 3\alpha$, $\widehat{AD} = 4\alpha$, $\widehat{AB} = 6\alpha$ va $\widehat{BAC} = \alpha$ kabi yoylarga bo'lingan. Ma'lumotlarga ko'ra α ni toping.

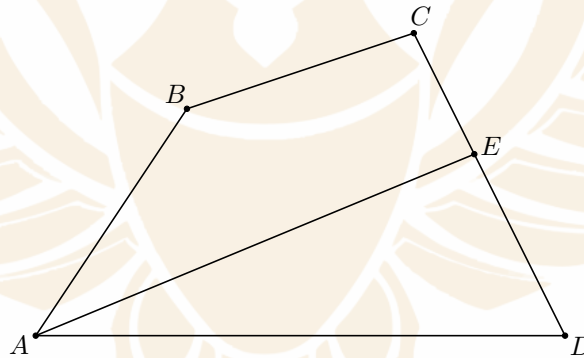


- A) 15
- B) 18
- C) 20
- D) 24

27. $ABCD$ trapetsiyada $DC \parallel AB$, $|DC| = 5 \text{ sm}$, $|AB| = 11 \text{ sm}$ va $S_{ABE} = S_{BCDE}$ bo'lsa, $\frac{|DE|}{|AE|}$ nisbat nimaga teng?

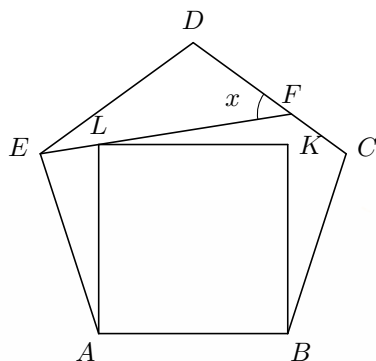


- A) $\frac{5}{11}$
 B) $\frac{5}{12}$
 C) $\frac{4}{9}$
 D) $\frac{3}{8}$
28. $A(0, 0)$, $B(1, 2)$, $C(3, 3)$, $D(4, 0)$ nuqtalar berilgan. A orqali o'tuvchi AE to'g'ri chiziq $ABCD$ to'rtburchakni teng yuzali ikki bo'lakka ajratadi. Bu chiziq CD chiziq bilan $E\left(\frac{p}{q}, \frac{r}{s}\right)$ nuqtada kesishadi. Bu kasrning eng kichik qiymatida $p + q + r + s$ ning qiymatini toping.



- A) 42
 B) 60
 C) 58
 D) 48

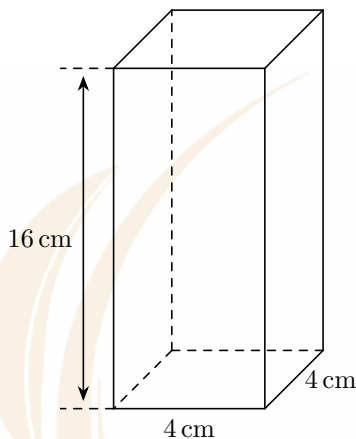
29. $ABCDE$ muntazam beshburchak va $ABKL$ kvadrat. AL to'g'ri chiziqlarning davomi DC tomonni F nuqtada kesadi. $\angle EFD$ ni toping.



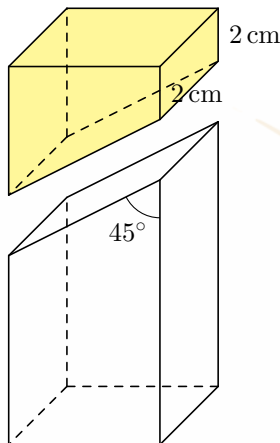
- A) 40°
 B) 30°
 C) 35°
 D) 45°
30. Og'ma prizmaning balandligi 10 ga, yon qirrasining tekislikdagi proyeksiyasi $10\sqrt{3}$ ga teng. Yon qirrasining asos tekisligi bilan hosil qilgan burchagini toping
- A) 60°
 B) $\arcsin \frac{1}{\sqrt{3}}$
 C) $\arccos \frac{1}{\sqrt{3}}$
 D) 30°
31. A va B to'plamlarning elementlari mos ravishda 24 va 36 sonlarining natural bo'luvchilaridan iborat bo'lsa, $A \cap B$ to'plamning elementlari sonini aniqlang.
- A) 6
 B) 4
 C) 8
 D) 12
32. Barcha raqamlari 5 dan katta bo'lmagan raqamlari takrorlanmaydigan 3 xonali sonlar nechta?
- A) 125
 B) 120
 C) 80
 D) 100

Topshiriqlar (33–35) va javob variant (A–F) larni o‘zaro moslashtiring.

Asos qirrasi 4 cm, balandligi 16 cm bo‘lgan to‘g‘ri to‘rtburchakli prizmaning ustki asosidan 2 cm pastda gorizontaal bilan 45° burchak hosil qiladigan qilib kesildi. Kesilgan qism bir oz yuqoriga surildi va uning har bir yuzi sariq rangga bo‘yaladi.



1 – rasm



2 – rasm

Javoblar.

- A) 128
- B) $8\sqrt{2} + 80$
- C) $8\sqrt{2} + 208$
- D) $16\sqrt{2} + 80$
- E) 256
- F) $16\sqrt{2} + 208$

33. Sariq rangga bo‘yalgan sirtning yuzi necha cm^2 ga teng?

34. Bo‘yalmagan qism sirti yuzini toping.

35. Prizmaning hajmini toping.

36. Tenglamalar sistemasini yeching:

$$\begin{cases} 3x^2 + 5xy - 2y^2 = 20 \\ x^2 + xy + y^2 = 7 \end{cases}.$$

a) Tenglamalar sistemasi nechta haqiqiy ildizga ega?

Javob: _____

b) Tenglamalar sistemasining haqiqiy ildizlari yig'indisini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqararasiga ko'chirib yozing.

37. Tenglamani yeching:

$$\sin 2\alpha + \sin \alpha + \cos 2\alpha + \cos \alpha + 1 = 0.$$

a) Tenglamaning eng kichik musbat ildizini toping.

Javob: _____

b) Tenglama $[0; 2\pi]$ kesmada nechta ildizga ega.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqararasiga ko'chirib yozing.

38. a, b, c musbat sonlar. $f(x) = a + bc^x$ ko'rinishidagi funksiya berilgan bo'lsin. Bu funksiya uchun $f(0) = 15$, $f(2) = 30$ va $f(4) = 90$ tengliklar o'rinli.

a) $a + b + c$ ning qiymatini toping.

Javob: _____

b) $f(6)$ ning qiymatini hisoblang

Javob: _____

Diqqat! Javoblaringizni javoblar vaqararasiga ko'chirib yozing.

39. $f(x) = x^3 + 3x^2 + 10x + 7$ funksiya berilgan.

a) $f(x)$ funksiya urinmalarining x o'qi bilan hosil qilgan burchak tangensining eng kichik qiymatini toping.

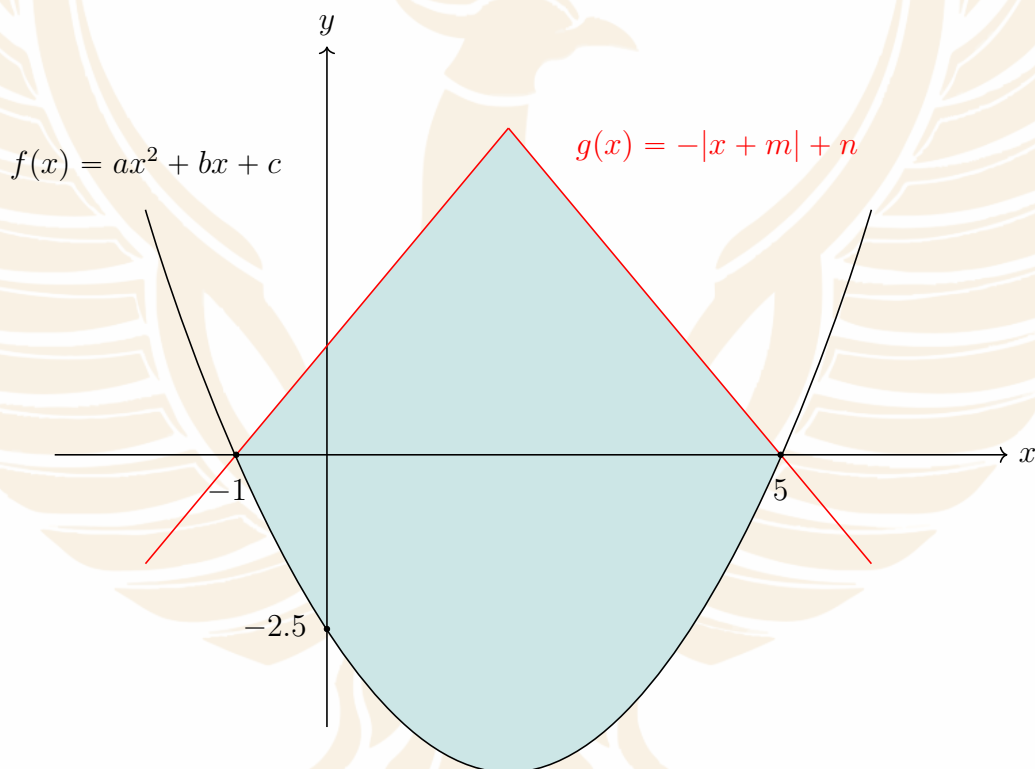
Javob: _____

b) $x_1 = -1$ va $x_2 = 0$ nuqtalaridan o'tkazilgan urinmalari orasidagi burchak tangensini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqararasiga ko'chirib yozing.

40. Chizmada $y = ax^2 + bx + c$ va $y = -|x + m| + n$ funksiyalar grafiklari tasvirlangan.



a) $a \cdot \frac{b - c}{n + m}$ ning qiymatini toping.

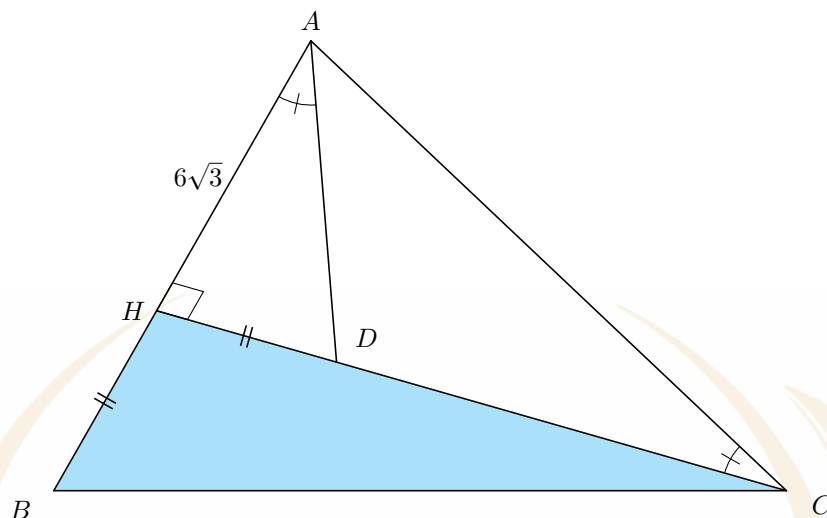
Javob: _____

b) Bo'yalgan soha yuzini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqararasiga ko'chirib yozing.

41. ABC uchburchak berilgan. Agar $CH \perp AB$, $\angle ACH = \angle BAD$, $|HB| = |HD|$, $|AH| = 6\sqrt{3}$ cm bo'lsa:



a) BHC uchburchak yuzini toping.

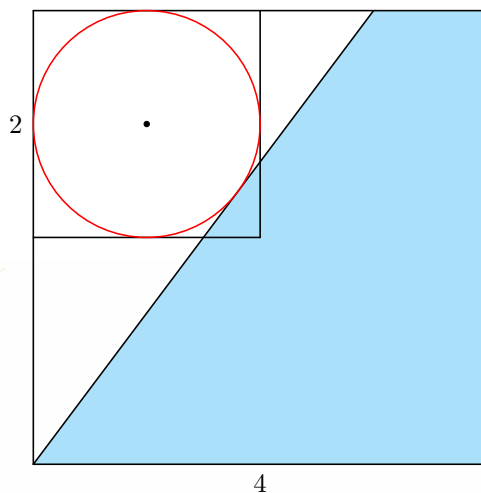
Javob: _____

b) $S_{AHC} = 24\sqrt{3}$ bo'lsa, BH kesma uzunligini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqaragasiga ko'chirib yozing.

42. Quyida tomoni 4 cm ga teng kvadrat tasvirlangan. Kvadratning bir uchini umumiy qilib tomoni 2 cm bo'lgan kvadrat va unga ichki aylana chizilgan.



a) Bo'yalgan soha yuzini toping.

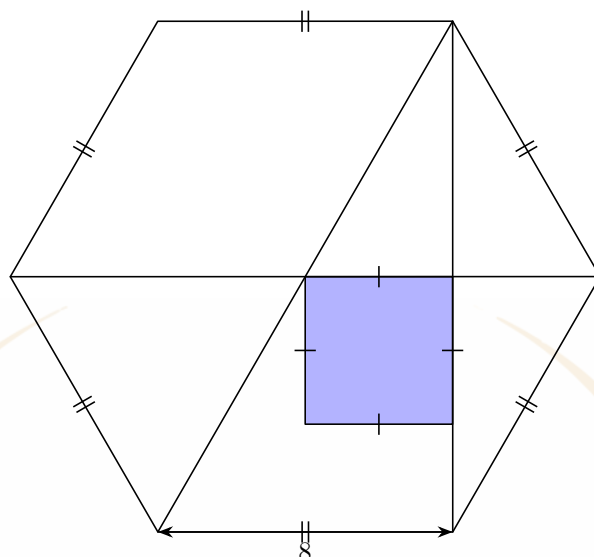
Javob: _____

b) Bo'yalgan va bo'yalmagan sohalar farqini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqaragasiga ko'chirib yozing.

43. Rasmda tomoni 8 ga teng bo'lgan muntazam oltiburchak tasvirlangan.



a) Bo'yalgan kvadrat yuzini toping.

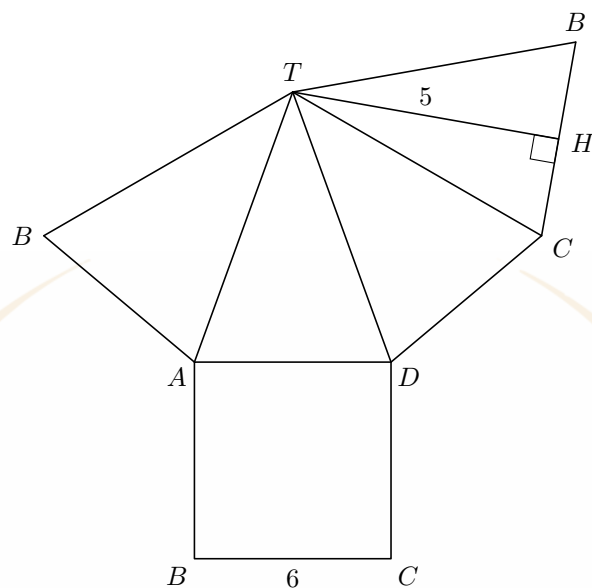
Javob: _____

b) Kvadrat yuzini oltiburchak yuziga nisbatini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqaragasiga ko'chirib yozing.

44. Asosi kvadratdan iborat bo'lgan piramida yoyilmasi berilgan. Agar $TH \perp CB$, $|TH| = 5$ cm va $|BC| = 6$ cm bo'lsa:



a) Piramidaning hajmini toping.

Javob: _____

b) Piramidaga ichki chizilgan shar radiusini toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqaragasi ko'chirib yozing.

45. Poyezd harakatlanishi uchun mashinistlarga va elektr energiyasiga pul sarflanadi. Mashinistlarga soatiga 250\$, elektr energiyasiga esa soatiga v^3 sarflanadi. Bu yerda v – poyezdning tezligi (km/soat).

a) Agar poyezd 16 km masofani bosib o'tishda jami xarajat minimal bo'lishi talab qilinsa, optimal tezlikni toping.

Javob: _____

b) Sarflangan minimal xarajatni toping.

Javob: _____

Diqqat! Javoblaringizni javoblar vaqaragasi ko'chirib yozing.